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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/568,278

02/15/2006

Osamu Funahashi

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EXAMINER

ENSEY, BRIAN

ART UNIT

PAPER NUMBER

2615

MAIL DATE

DELIVERY MODE

07/17/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/568,278	<b>Applicant(s)</b> FUNAHASHI, OSAMU	
	<b>Examiner</b> Brian Ensey	<b>Art Unit</b> 2615	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 February 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/31/07 &amp; 2/15/06</u>                                     | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kreitmeier et al. U.S. Patent Application Publication 2004/0165746 A1 in view of Tanabe U.S. Patent No. 6,829,366.

Regarding claim 1, Kreitmeier discloses a speaker including: a concave frame (11) having an opening on the upper part thereof; a diaphragm (15) provided in the opening of the frame with outer periphery of the diaphragm being fixed to an edge of the opening of the frame through a first edge (16); a voice coil (13) provided on the bottom surface of the diaphragm (voice coil attached to bobbin 14); a magnetic circuit (12) wherein at least a part of the voice coil is movably disposed in a magnetic gap of the magnetic circuit; and a suspension holder (18) outer periphery thereof being fixed to the frame through a second edge (17) on the bottom surface of the diaphragm inside the frame; wherein the first and the second edges are substantially symmetrical with respect to a space between the first and the second edges, inner periphery of the suspension holder and inner periphery of the diaphragm are directly or indirectly fixed to the voice coil at a part outside of the magnetic gap (affixed at a common point at the top of bobbin 14), the magnetic circuit has a magnet (12) provided outside of the bottom of the frame, (See Fig. 3 and paragraphs 33 and 34). Kreitmeier does not expressly disclose the outer

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periphery of the magnet extending beyond the center of the second edge and the magnetic gap of the magnetic circuit is pushed into the frame past bottom surface of the frame. However, Tanabe discloses the outer periphery of the magnet (4) extending beyond the frame step and therefore the center of the second edge and the magnetic gap of the magnetic circuit is pushed into the frame past bottom surface of the frame (See Fig. 2). Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention to provide a magnet of a larger diameter and a magnetic circuit pushed into the frame as taught by Tanabe for greater field strength and increase diaphragm amplitude.

Regarding claim 2, the combination of Kreitmair in view of Tanabe further discloses the magnetic circuit includes: a yoke having a columnar protrusion formed on a top surface of a plate member (under magnet 12); a ring-shaped magnet (12) laminated on the yoke; a ring-shaped plate (mounted between magnet 12 and frame 11) outer periphery thereof being laminated on the magnet and inner periphery thereof being pushed into the frame together with the columnar protrusion of the yoke thereby forming a magnetic gap between the inner periphery of the ring-shaped plate and the outer periphery of the columnar protrusion (See Fig. 3).

Regarding claims 7 and 8, the combination of Kreitmair in view of Tanabe further discloses the magnetic circuit has the magnet (4) provided outside of the bottom of the frame and outer periphery thereof being extending at least beyond the second edge (See Tanabe Fig. 2).

Claims 3 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Kreitmeir in view of Tanabe as applied to claim 1 above, and further in view of Proni U.S. Patent No. 6,243,479.

Regarding claim 3, the combination of Kreitmeir in view of Tanabe discloses the magnetic circuit includes: a yoke having a columnar protrusion formed on a top surface of a plate member (under magnet 12); a ring-shaped magnet (12) laminated on the yoke; a ring-shaped plate (mounted between magnet 12 and frame 11) outer periphery thereof being laminated on the magnet and inner periphery thereof being pushed into the frame together with the columnar protrusion of the yoke thereby forming a magnetic gap between the inner periphery of the ring-shaped plate and the outer periphery of the columnar protrusion (See Fig. 3). The combination of Kreitmeir in view of Tanabe does not expressly disclose a plate-shaped top plate laminated on the columnar protrusion of the yoke. However, the use of top plates on the columnar yoke is well known in the art and Proni teaches a plate-shaped top plate (60) laminated on the columnar protrusion of the yoke to direct cooling air through the yoke (See Fig. 1). Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the plate as taught by Proni to aid in cooling the magnet circuit of the combination of Kreitmeir in view of Tanabe.

Regarding claim 9, the combination of Kreitmeir in view of Tanabe in view of Proni further discloses the magnetic circuit has the magnet (4) provided outside of the bottom of the frame and outer periphery thereof being extending at least beyond the second edge (See Tanabe Fig. 2).

Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over the

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combination of Kreitmeir in view of Tanabe as applied to claim 1 above, and further in view of Takashi Japanese Patent Publication 08-307990.

Regarding claims 4-6, the combination of Kreitmeir in view of Tanabe discloses a step section is formed on a lower part of a side surface of the frame for fixing the second edge (See Kreitmeier fig. 3) and disclose an air vent is provided on a side surface portion lower than the step section (Typical loudspeaker frame construction), The combination of Kreitmeir in view of Tanabe does not expressly a dust filter is provided in the air vent section and the dust filter is provided in the air vent section on an outside portion of the frame. However, the use of dust filters on air vents of speakers is well known in the art and Takashi teaches the use of dust filters on air vents of speakers (See translation abstract). Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the dust filter as taught by Takashi to prevent damage and heat build up of the magnet circuit and voice coil due to dust contamination.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Ensey whose telephone number is 571-272-7496. The examiner can normally be reached on Monday - Friday 6:00 AM - 2:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Suhan Ni can be reached on 571-272-7505. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

**Any response to this action should be mailed to:**

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Commissioner of Patents and Trademarks  
P.O. Box 1450  
Alexandria, Va. 22313-1450

**Or faxed to:**

(571) 273-8300, for formal communications intended for entry and for informal or draft communications, please label "PROPOSED" or "DRAFT".  
Hand-delivered responses should be brought to:

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Randolph Building  
401 Dulany Street  
Arlington, VA 22314

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/Brian Ensey/  
Primary Examiner, Art Unit 2615  
July 17, 2008